



National Park Service
U.S. Department of the Interior
Yellowstone National Park
Center for Resources – Fisheries and Aquatic Sciences Section
P.O. Box 168
Yellowstone National Park, WY 82190



DROUGHT FISHING RESTRICTION STRATEGY YELLOWSTONE NATIONAL PARK

BACKGROUND INFORMATION

Yellowstone National Park is managed to protect cultural and natural resources and outstanding scenery, and to provide for visitor use. Fishing has been a major visitor activity for well over a century. Because of this history, fishing continues to be allowed and can complement, and in some cases even enhance, the park's primary purpose of preserving natural environments and native species.

Because of the increasing number of anglers in the park, Yellowstone has restrictions on angling that include season opening and closing dates, restrictive use of bait, catch-and-release only for native fish, and number/size limits for nonnative species. Some waters are closed to fishing to protect threatened and endangered species, sensitive nesting birds, and to provide scenic viewing areas for visitors seeking undisturbed wildlife.

Geothermal features have always naturally affected the temperature regimes of several popular Yellowstone fishing waters, such as the Firehole, Gibbon, and Madison rivers. Trout of these streams, which are considered "coldwater" species, have behaviorally adapted to deal with these conditions. In recent years, however, regional weather patterns have resulted in extremely low flows and high stream temperatures in the park. These changes have heightened effects on fish living in geothermally-influenced streams and now threaten to stress native and wild trout in many other park waters where they are not accustomed to such conditions.

THE PURPOSE OF A DROUGHT FISHING STRATEGY

Yellowstone streams vary in temperature and are always coldest at dawn and warmest at dusk. The relatively high elevation and cool nighttime air temperatures result in declines in stream temperatures overnight, especially in smaller streams. It is not uncommon for a park stream to range 25°F or more in temperature during a 24-hour period. However, the park's larger rivers, such as the Lamar, Yellowstone, and others, are much slower to cool down, and fishes in these waters get little relief from extended heat during the summer season. There is also much less variation between daytime and nighttime stream temperatures in geothermally-influenced streams. The cumulative impacts of sustained high stream temperatures result in cold-water adapted trout becoming extremely stressed. Angling of these trout, which often congregate in deep pools seeking shade and cool temperatures, significantly adds to this stress. Trout that would be capable of revival and release following a fight when caught in coldwater are more likely to die when caught in warm water.

THERMAL THRESHOLDS OF TROUT

Lethal temperature limits vary among trout species, with rainbow and brown trout tolerating somewhat higher temperatures than do cutthroat trout. In general, trout mortality is high in waters >68°F and complete in waters >77°F. Above these limits, trout almost certainly will die, at least if exposed for extended periods.

FISHING RESTRICTION CRITERIA AND OPTIONS

Yellowstone National Park will restrict fishing on waters one or more of the following criteria are met.

- 1) *Stream flows decline below long-term averages, and/or*
- 2) *Stream temperatures approach 73°F (22.7°C) for extended periods.*

The decision whether to implement a particular restriction option will depend on the threat to the fisheries as well as existing and projected fishing pressure. The following options may be implemented when one or more criteria are met.

- A) ***Time-of-Day Restriction:*** Fishing begins at 5 a.m. and ends at 2:00 p.m. each day. No fishing allowed after 2 p.m.
- B) ***Full Closure:*** All fishing on the designated water will be prohibited. This restriction is appropriate for waters with extremely low flows that threaten the fishery resources (e.g., excessive angling pressure concerns). Full closures may be implemented in priority waters that meet the thresholds and in which *Time-of-Day Restrictions* are inadequate, and in other waters if conditions warrant.

Broader application of restrictions may be necessary to address excessive angling pressure on remaining open waters in extreme drought conditions. Shifts in angling pressure will be monitored if restrictions are implemented.

PRIORITY WATERS

Based on past experience, the following park waters have high angling pressure and are most likely to reach or exceed the drought flow/temperature thresholds in any given year.

Northern Yellowstone: Gardner River below Osprey Falls, Lava Creek below Undine Falls, Lamar River below Cache Creek, all of Slough Creek, Soda Butte Creek below Amphitheater Creek, and the Yellowstone River below Seven Mile Hole.

West side of the park: Madison River, Firehole River below Kepler Cascades, and the Gibbon River below Gibbon Falls.

Southern portion of Yellowstone: Bechler River below Ouzel Creek, Falls River below Rainbow Falls, Mountain Ash Creek below Union Falls, Proposition Creek, Boundary Creek below Dunanda Falls, Robinson Creek, and the Snake River below Six Mile Ford.

STREAM TEMPERATURE AND FLOW INFORMATION AVAILABLE AT:

http://volcanoes.usgs.gov/yvo/hydro_data.html

FOR MORE INFORMATION, CONTACT:

Todd M. Koel, Ph.D.
Supervisory Fisheries Biologist
PO Box 168

Yellowstone National Park, Wyoming 82190
<http://www.nps.gov/yell/planyourvisit/fishing.htm>

